We claim:

1. A method for determining placement sites for equipment within a geographic area in a telecommunications network comprising the steps of:

determining a baseline architecture planning area having a tree structure wherein copper cables comprise the branches interconnecting cross-connects, central offices, and subscriber locations;

determining a forecast of customer demand for digital subscriber line service within said baseline architecture planning area and using demographic data for said planning area; and

determining from said forecast the sites in said tree structure where the equipment is to be placed and the type and numbers of such equipment minimizing cost and satisfying design constraints.

2. The method in accordance with claim 1 further comprising the step of, based on the determination of sites, placing the specific equipment identified and the numbers of such equipment at said sites.

3. The method in accordance with claim 2 wherein said step of determining the forecast includes accessing a geographic information system containing demographic information on the telecommunications subscribers within said geographic area.

4. The method in accordance with claim 3 wherein said step of determining said planning area includes the step of determining the boundary of said area based on data received from said geographic information system.

5. The method in accordance with claim 3 wherein said step of determining said planning area includes the step of creating a network tree having a central office and cross-connects interconnected by cables and subscriber stations connected to cables.

6. The method in accordance with claim 4 wherein said step of determining said forecast includes acquiring data from said geographic information system as to the central office locations within said boundary, the map of the copper cables within said boundary, subscriber income, and number of telephone lines within said boundary.

7. The method in accordance with claim 6 wherein said step of determining said forecast includes fitting a mixed regressive spatial autoregressive logistic (MRSAL) model to selected data from said geographic information system.

8. The method in accordance with claim 7 wherein MRSAL model is of the form $P(W; x_1, x_2, \ldots, x_k) = 1 / [1 + \exp\{-(\alpha + \rho WP + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_k x_k)\}]$.

9. The method in accordance with claim 8 wherein all the values of W are equal to zero.

10. The method in accordance with claim 4 wherein said step of determining the sites for placement of equipment includes the steps of:

normalizing the length of cable connected to said subscribers;

determining how subscribers connect to the existing communications network;

determining the available locations for placing the equipment;

constructing a tree network connecting all said available sites; and

optimizing where equipment should be placed at said sites to minimize the total costs of the equipment.

11. The method in accordance with claim 10 wherein said optimizing step is based on inputs including the set of equipment available to be placed, said tree network connecting all of the candidate equipment sites, and the maximum allowable distance between a subscriber and its serving equipment.

12. The method in accordance with claim 11 wherein said optimization step is performed with the constraints that no subscriber is too far from its serving equipment, no equipment serves more susbcribers than its allowed capacity, all subscribers are served at a site along a path to a central office, and any two subscribers whose copper cables meet on their path to their serving equipment are served at the same equipment location.